NOvA Experiment Status

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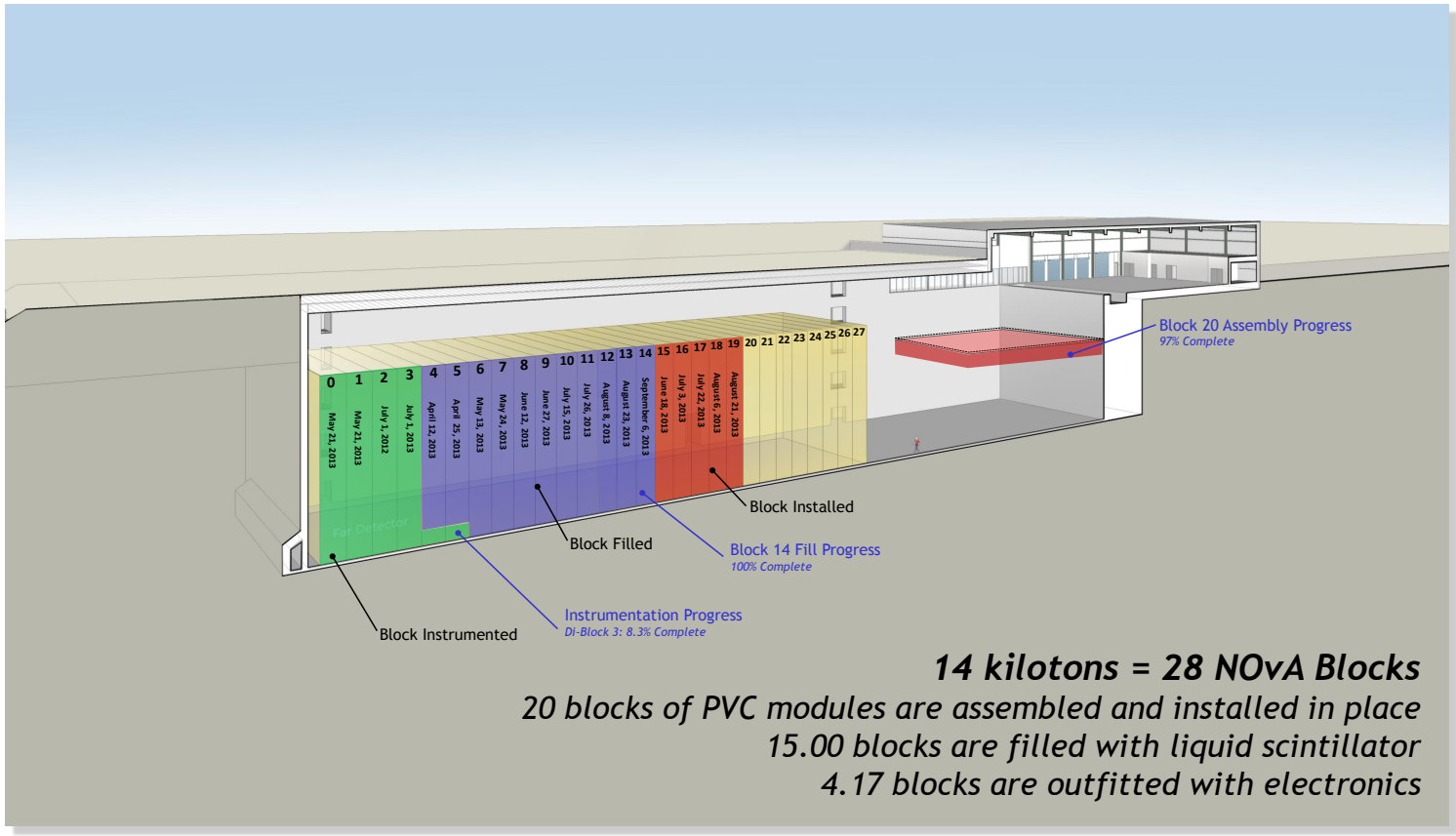
All Experimenter's Meeting, September 16, 2013

Far Detector Progress

The Intensity Frontier

NOvA Far Detector Assembly Progress

Status Date: 09SEP13



14 kilotons = 28 NOvA Blocks

20 blocks of PVC modules are assembled and installed in place
15.00 blocks are filled with liquid scintillator
4.17 blocks are outfitted with electronics

S. Dixon

FarDet Outfitting

Plans to get to full gain and cold operation:

Item	Goal
✓Test FEB firmware on NDOS test stand (TEC automatic shutdown)	8/9
✓Test HV setting on NDOS Test stand (nom. gain)	8/14
✓Understand FEB firmware/readout threshold calculations	8/16
✓Run "quiet" APDs cold at full gain on NDSB test stand (> 24 hrs)	8/16
✓Run di-block 01* APDs warm overnight at nominal gain -30V (using FEB calibration)	8/21
✓Run di-block 01* APDs ~1 week at full gain (gain = 100) warm	Under way
✓Run "noisy" APDs on NDSB test stand cold at full gain (gain = 100) ~ 1 week	Under way
✓Attempt to run di-block 02# warm, full gain (recovered 1/2 block)	9/10
• Evaluate detector performance from data (full gain, warm)	on going
• Set di-block 01* APDs to run cold at full gain (~1 day to get cold)	9/18
• Run di-block 01* APDs ~1 week cold at full gain	9/18 - 9/30
• Evaluate detector performance data (full gain, cold)	9/23 - 9/30
• Run di-block 02# APDs cold and with full gain ~ 1 week	9/23 - 9/30

Near Detector Assembly Area

2nd ND Block ready for installation

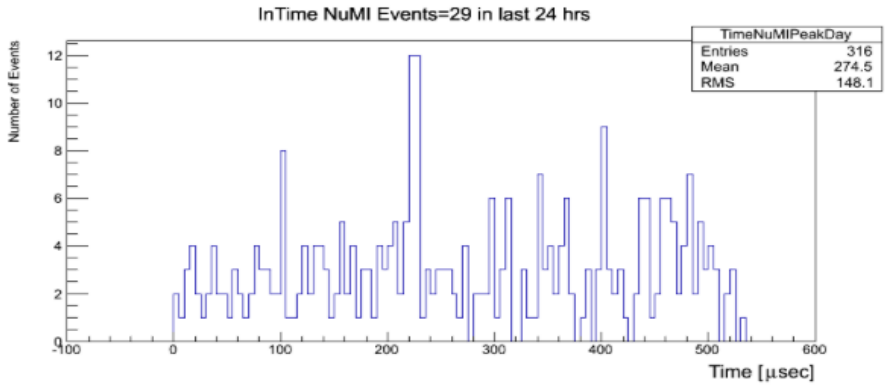
Near Detector Progress

News

- Scintillator piping pressure tests to continue this week and next
- Expect to receive 4 fill machines from IU next week
- 2nd block to be in position next week
- Have modules for 5 and half blocks -- *keep building blocks*
  - *3rd one early October* ***1st di-block ready for electronics***
  - *4th late October, 5th mid November*
  - *6th block early Dec* ***2nd di-block ready for electronics***
- Cooling and dry-air system assembly started
- The underground detector hall is declared off-limit of visitors now
  - *Special case should arrange through Xuebing, Karen & Ting*
  - *Visitors to be escorted all time by people designated by us*

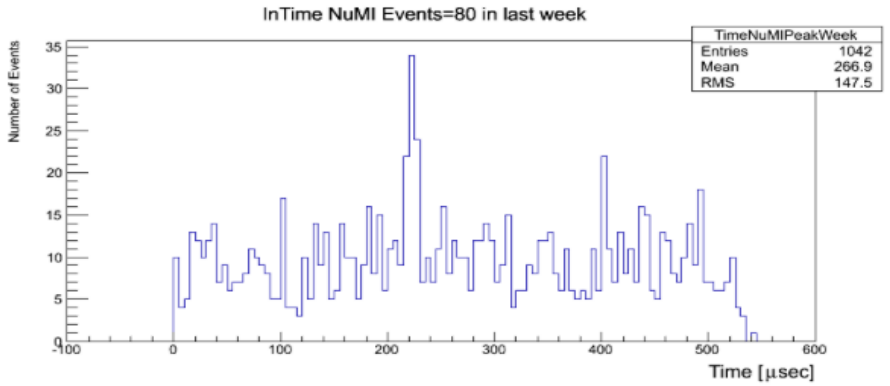
NUMI Beam Timing in NDOS

NDOS Timing Peak for last 24 hr.



- **Cuts applied**
- nhitx+nhity > 9
- nhitx > 4 and nhity > 4
- tave > 0.0 and tave < 550.0
- y1 < 120.0
- abs(x1) < 100.0
- z1> 210 and z1 <1000
- cosnumi > 0.7
- run >= 15071 (~8:00pm on Sept. 12, 2013)
- Number of FEBs > 200

NDOS Timing Peak for last week



- NOvA prototype detector still running continuously
- Useful for beam timing measurements, FarDet prediction
- Test Stand (30 APDs) used to study APD noise rates

Summary

- Continue to take data at Far Detector
  - 2 kilotons with full electronics (warm APDs at nominal gains)
  - Total of 7 kilotons with scintillator, Front-end boards
  - Preparing for cold APD operations
- Near Detector installation continuing
  - 2nd block installation soon
- NUMI beam seen in NDOS
  - 2 timing adjustments (~1.5 ms + 1 leap second)
  - FOM of >8 in 24 hours